

Appl. No. 10/066,250
Amdt. dated January 29, 2004
Reply to Office action of January 8, 2004

Remarks/Arguments

The great majority of commercial soybean oil production processes extract or separate the oil from soybean meal by a process known as solvent extraction in which a solvent, commonly hexane, is pumped through flaked soybeans to dissolve the oil in the hexane. The hexane is then separated from the oil and recycled. Free fatty acids in the extracted soybean oil are removed by a process known as caustic refining in which the oil is mixed with a caustic material, such as sodium or potassium hydroxide, which undergoes a saponification reaction with the acids, forming soaps that are then removed by centrifugation.

Chemical refining soybean oil is an expensive process, requiring a large investment in capital equipment. In addition, a significant quantity of the oil is captured by the soaps, adversely affecting oil yield. Also, the caustic refining process produces soapstock, which has little commercial value, and it is difficult to dispose of without environmental problems. Non-hydrogenated soybean oil produced by solvent extraction and caustic refining is unsuitable for use in commercial frying operations due to its limited frylife. Such oil has a maximum frylife of only about 4-5 fry cycles, a cycle being the frying of one batch of food.

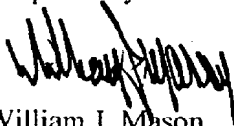
Applicants have discovered that soybean oil having a commercially acceptable frylife can be produced without solvent extraction or caustic refining by a combination of mechanical extraction of the oil from the soybean meal combined with physical refining of the crude oil. While the prior art discloses mechanical oil extraction and physical refining separately their use in combination as a replacement for solvent extraction and caustic refining, and the properties of the oil produced by this process, have not been appreciated or suggested by the prior art.

The cited Knowlton patent is specifically directed to the use of solvent extraction or a combination of physical pressure and/or solvent extraction with caustic refining to remove free fatty acids. See Col. 6, ll. 29-46, and Example 2 relied upon by the Examiner. To the contrary, all of applicant's independent claims, and thereby the dependent claims, specifically state that the free fatty acids are removed by heating the soybean oil under a vacuum at specified temperatures. This distinction has been further emphasized by amending claim 1 to incorporate the language originally in claim 8, stating that the process is a "solvent extraction free, caustic refining free" process, thereby excluding processes using solvent extraction or caustic refining. Since this limitation in the preamble limits the scope of the claim, it must be taken into account in construing the claim. See MPEP 2111.02 and the cases cited therein. Accordingly, reconsideration and withdrawal of the rejection of claims 1-14 under 35 U.S.C. 103(a) is respectfully requested.

A terminal disclaimer is submitted herewith to remove the double patenting rejection.

For the forgoing reasons, and in view of the amendments to the claims, it is believed that this application now defines a patentably distinguishable invention and is accordingly in condition for allowance. Such action is respectfully solicited.

Respectfully submitted,



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Date: January 29, 2004
File No. 5483-003A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

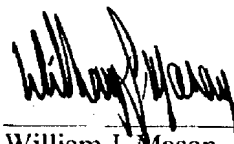
Honorable Director of Patents and Trademarks
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Sir:

CERTIFICATE OF TRANSMISSION

Date of Deposit: January 29, 2004

I hereby certify that this paper, which is a Response to an Office Action for the
SOYBEAN OIL PROCESS S/N 10/066,250 is being sent via facsimile (703) 872-9306 to the
United States Patent and Trademark Office on the date indicated above.



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